

REMARKS

This response has been prepared in response to the Office action mailed on 4 October 2005 (Paper No. 20050805). Allowance of claims 28 through 42 is noted with appreciation.

Status of Claims

Prior to entry of this response, claims 12 through 42 were pending in the application. Claims 1 through 11 were previously canceled without prejudice or disclaimer of their subject matter. By this response, claim 38 is amended to correct punctuation.

Allowable Subject Matter

Claims 13 through 21, 25 and 29 through 37 are objected to for dependency upon a rejected base claim, but the Examiner stated that these claims would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Rejection of Claims 12, 22, 24 and 26-28 Under 35 U.S.C. §102(b)

Claims 12, 22, 24 and 26 through 28 are rejected under 35 U.S.C. §102 as being anticipation by the Prescher's Torkel reference. Applicant respectfully traverses this rejection for the reason that this reference has a publication date of several years later than Applicant's filing date. Its withdrawal is required.

Rejection of Claims 12, 22-24, 32 & 33 Under 35 U.S.C. §102

In paragraph 3 of the Office action, the Examiner rejected claims 12, 22 thru 24, 32 and 33 under 35 U.S.C. §102(b) as allegedly anticipated by Randall, U.K. Patent Application No. GB 2027232. Applicants respectfully traverse this rejection for the following reasons:

In support of the rejection, the Examiner states that:

As per claim 12: Randall's time indicator comprises a movement element, and a tourbillon module, said tourbillon module being visible from a dial side of said movement element; said tourbillon module comprising a cantilevered bearing that supports said tourbillon module, wherein said tourbillon module comprises an independent element relative to said time indicator, and said tourbillon module is removably separable as said tourbillon module from said movement element via a rear side of said time indicator.

As per claim 22: Randall's time indicator has the tourbillon module positioned in a plane of a dial of the time indicator and is visible from the dial side of the time indicator in a twelve o'clock position.

As per claims 24 and 26-28: The method steps will be met during the normal assembly of the apparatus stated above.

Applicant notes that a careful reading of Randall '232 establishes that Randall '232 does not use the nomenclature found in the excerpted reasons stated by the Examiner. Moreover, Randall '232 does not teach the structures stated in those excerpts.

First, Randall '232 discloses a mechanical timepiece fitted with a tourbillon constructed with:

“pinion 5 meshes with and drives the toothed wheel 8, mounted on shaft 3, and causes 3 to rotate about its own axis, A₂. A fixed contrate wheel, 9, is in mesh with the tooth wheel 10. Due to the rotation of the shaft, 3, the wheel 10 moves around the wheel 9. This causes [wheel] 10 to turn, and with it the framework 1. A toothed wheel W, fixed to 2, meshes with a pinion V pivoted in 1, and this imparts motion to drive the escapement [e] and thus maintain the oscillations of the balance.”¹

As explained in Randall ‘232,

“Shaft 3 is provided with suitable bearings in the main plates, 4. The drive for the whole mechanism is provided by the toothed pinion 5 carried on the shaft 6, itself driven by the pinion 7 in the usual way by a suitable mainspring and reduction gears carrying the hands.”²

This mechanism is named a *tumble tourbillon* by Randall ‘232.

Historically, a tourbillon is complicated mechanism which is believed to have originally been invented by Abraham Louis Breguig (1747-1823) in 1801, and patented on the 7th Messidor of year IX on the calendar of the French Revolution, that is, on the 26th of June 1801. The aim of the tourbillon mechanism is to improve the precision of a mechanical watch by statical equilibrium of mechanical in exactness. The setup of the original tourbillon, especially the bearings of the cage, is quite different from the invention defined by the pending claims.

Generally, all tourbillons have in common a balance wheel which is mounted on a rotating platform, springs, an anchor and an escape wheel. These to a certain extent are

¹ Randall ‘232, left column, lines 56-65 and right column, lines 1 and 2.

² Randall ‘232, left column, lines 49-55.

subject to the force of the Earth's gravitational pull, which comes permanently into play due to the ever-changing center of gravity of the system and, consequently, influences the precision of the movement. Louis Breguet did not try experimenting with shapes or the mutual repositioning of parts, but approached the problem of arrhythmia from a different angle by placing the entirety of the whole moving mechanism in a rotatable casing that would complete one revolution per minute in the opposite direction. Thus, errors due to gravitation could be evened out and the hands of the watch would move with a precision that approaches perfection. Modern tourbillons have between forty and ninety parts with a total weight of between about 0.2 and 0.6 grams.

In contrast to a normal mechanical movement of a timepiece, the balance wheel of a tourbillon not only oscillates back-and-forth, but additionally rotates continuously around an oscillating axis, with the movement of rotation and movement of oscillation from rotating movement being overlaid onto the oscillating movement.

Tourbillons are time intensive to construct and assemble principally due to the complicated structure and the difficulty in separating the tourbillon from the remainder of the watch movement. Consequently, watches containing tourbillons are extremely expensive, beginning at approximately U.S. \$100,000.00. The primary difficulty in the construction of a timepiece containing a tourbillon has, heretofore, been that the watch movement has been constructed and assembled around the tourbillon. Therefore, when the tourbillon requires maintenance, it is generally necessary to disassemble the watch movement, almost completely, in order to gain access to the tourbillon's mechanism.

The term *flying tourbillon*, as that term appears in Applicant's claims 12 and 24, is art recognized nomenclature. In 1927, Alfred Gelwig invented the *flying* tourbillon with a rotor attached on only one side, so that the delicate mechanism of the tourbillon (*e.g.*, the assembly formed by the rotating platform which forms the tourbillon's cage, the balance wheel which is mounted on the rotating platform, the springs, the anchor and the escape wheel) is suspended within the casing of the watch by a barely visible pivot in order to give the illusion that the tourbillon is flying.

Unlike either Applicant or Alfred Gelwig, Randall '272 teaches not a *flying tourbillon*, but a *tumbling tourbillon*,³ that is a *tourbillon* in which "the oscillator is mounted within a framework, and this framework is caused to rotate about two axes [*e.g.*, axes A_1 - A_1 and A_2] at right angles, at the same time."⁴ The construction of this *tumbling tourbillon* between both main plates 4 of the watch's mechanism with the suspension of drive shafts 3, 6 by bearings held by opposite main plates 4 negates any *flying* characteristic to the *tumbling tourbillon* with a rotor attached on only one side;⁵ in point of fact, the necessary right angle rotation around *two* axis is inimical to a *flying* characteristic. Consequently, the absence of either teaching or suggestion of a flying

³ Randall '232, left column, line 3, *i.e.*, the title.

⁴ Randall '232, left column, lines 36-39.

⁵ Randall '232 teaches a contrary structure in which "shaft 3 is provided with suitable bearings in the main plates, 4. The drive for the whole mechanism is provided by the toothed pinion 5 carried on the shaft 6, itself driven by the pinion 7 in the usual way by a suitable mainspring and reduction gears carrying the hands." Left column, lines 49-55.

tourbillon is a convincing demonstration of the absence of anticipation of Applicant's claims 12 and 24 under 35 U.S.C. §102(b) by Randall '232. Accordingly, this rejection may not be maintained.

Second, and as was explained on page 3 of Applicant's English language translation of the original specification, the time indicator defined by the pending claims is, as a "whole", "fully separable from the movement, which advantageously enables Applicant's tourbillon module to be 'assembled by itself and be adjusted outside the movement' as a module." Specifically, Applicant's tourbillon module may be removed to the backside of the timepiece, as is best seen from Applicant's Figures 5 and 6, without requiring disassembly of movement of the time indicator.

Independent claims 12 and 24 reflect this difference in structure, with claim 12 defining a time indicator "comprising a movement element and a flying tourbillon module," with "said flying tourbillon module comprises an independent element relative to said time indicator." Process claim 24 defines the assembly as comprising the steps of "providing the time indicator" and "providing a flying tourbillon module" with "a plurality of elements forming an interval module for supporting the regulatory elements" of the "time indicator" and "mounting the flying tourbillon module in a time indicator as said *integral module* separable from the movement element."

In contradistinction, Randall '272, as shown in his single Figure, places his *tumbling tourbillon* between the two spaced-apart main plates 4 of a portable timepiece such as a watch, in order to provide a "framework [that] is caused to rotate about two

axes at right angles, at the same time.”⁶ Consequently, the *tumbling tourbillon* of Randall ‘232 provides neither a structure amenable to Applicant’s “flying tourbillon module being visible from a dial side of said movement element” nor “removably separable as said flying tourbillon module from said movement element via a rear side of said time indicator.”⁷ Applicant further submits that because Randall ‘232 teaches his *tumbling tourbillon* is mounted upon bearings between “main plates 4”⁸ and bracketed by shafts 3 and 6, Randall ‘232 makes neither teaching nor suggestion of Applicant’s step of “mounting the flying tourbillon module in the movement as said integral module removable separable from the movement element.”⁹ In short, this tumbling tourbillon taught by Randall ‘232 is integrated into the movement of the time indicator, and is not constructed either as a “module” or as a “module which is separable from said movement element via a rear side of said time indicator.” In essence, the integration of the tourbillon taught by Randall ‘232 requires partial, if not complete disassembly as is required to gain access to, and enable removal of “toothed wheel 10” and one, or possible both of main plates 4 which support Randall ‘232’s *tumbling tourbillon*; it is doubtful that the structure of the *tumbling tourbillon* may be removed except through the area occupied by one or both main plates 4 due to the suspension of shafts 3, 6 by bearings

⁶ Randall ‘232, left column, lines 56-65 and right column, lines 1 and 2.

⁷ Claim 12, lines 3 and 4, and lines 8 and 9.

⁸ Randall ‘232, left column, line 50.

⁹ Claim 24, lines 6 and 7.

held by opposite main plates 4 the watch's movement.

Under 35 U.S.C. §102(b), unless all of the element of a claim are found within the reference, in the assembly taught by the claim, there is no anticipation under 35 U.S.C. §102(b). Moreover, under 35 U.S.C. § 102(b), it is error to assume that two structures are the same or equivalent simply because they perform the same function. The Federal Circuit has held it error to assume that two structures are the same or equivalent simply because they perform the same function. *Roton Barrier, Inc. v. Stanley Works*, 79 F.3d 1112, 1126-27 (Fed. Cir. 1996); *Pennwalt Corp. v. Durand-Wayland, Inc.*, 833 F.2d 931, 934 (Fed. Cir. 1987) (*en banc*). Accordingly, this rejection is improper under the all elements rule. Withdrawal of the rejection and allowance of claims 12, 22 through 24, 32 and 33 is respectfully requested.

Objection to Claims 13-21, 25-31, 33 and 34

In paragraph 4 of the Office action, the Examiner objected to claims 13 through 21, 25 thru 31, 33 and 34 for dependency upon a rejected base claim, but stated that these claims would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Fee Incurred

A fee of \$1,020.00 is incurred by the filing of a Petition for a three month extension of time. Applicant's check drawn in this amount to the order of Commissioner accompanies this Amendment. Should the check become lost, be deficient in payment, or

should other fees be incurred, the Commissioner is authorized to charge Deposit Account No. 02-4943 of Applicant's undersigned attorney in the amount of such fees.

In view of the above, it is submitted that the claims of this application are in condition for allowance, and early issuance thereof is solicited. Should any questions remain unresolved, the Examiner is requested to telephone Applicant's attorney.

Respectfully submitted,



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